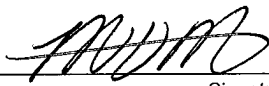


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		4740-230	
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	10/723,805	Nov. 26, 2003	
	First Named Inventor		
	Hosein		
	Art Unit	Examiner	
	2617	Elcenko	
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.			
This request is being filed with a notice of appeal.			
The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
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<input type="checkbox"/>	applicant/inventor.	Signature	
<input type="checkbox"/>	assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)	Michael D. Murphy	
		Typed or printed name	
<input checked="" type="checkbox"/>	attorney or agent of record.	919-854-1844	
	Registration number 44,958	Telephone number	
<input type="checkbox"/>	attorney or agent acting under 37 CFR 1.34.	October 5, 2009	
	Registration number if acting under 37 CFR 1.34 _____	Date	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.			
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Hosein, et al.

Serial No.: **10/723,805**

Filed: **November 26, 2003**

For: **Dynamic Mobile Power Headroom
Threshold for Determining Rate Increases in
the Reverse Channel of a CDMA Network**

Docket No: **4740-230**

PATENT PENDING

Examiner: Mr. Eric J. Elcenko

Group Art Unit: 2617

Confirmation No.: 9768

Mail Stop AF
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P.O. Box 1450
Alexandria, VA 22313-1450

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October 5, 2009

Date

Laura A. Wade

This correspondence is being:

- ☒ electronically submitted via EFS-Web

PRE APPEAL BRIEF REVIEW REQUEST ARGUMENTS

Claims 1, 4, 7, 14-15, and 17-18 are rejected as obvious over the combination of Corazza (U.S. Pub. 2003/0133409) and Sintonen (U.S. Pub. 2003/0142678). The claims at issue, including independent claims 1 and 14, are directed to adjusting the transmit power headroom threshold of a mobile station based on reverse link load indications. According to the instant application, the transmit power headroom threshold is a threshold value that defines the amount of transmit power reserved by the mobile station, in case any needed retransmission of a frame requires higher power than the original transmission. (See paragraph [0007].)

The Patent Office concedes that Corazza does not teach adjusting a power headroom threshold at a mobile station based on such a load indication. However, the Patent Office states

that Sintonen “teaches adjusting a power headroom level based upon interference against a received signal at a mobile station.” See Final Office Action, page 4 starting at line 3. Applicant respectfully submits that the statement is plainly in error.

Sintonen does not teach adjusting the transmit power headroom threshold of a mobile station based on a reverse link load indication, or any other indication. Actually, Sintonen does not teach anything related to the transmit power headroom threshold of a mobile station. Instead, Sintonen teaches controlling the amplification gain of a received analog signal such that the resulting amplified value remains smaller than the maximum value of an analog-to-digital converter (ADC). See, especially, paragraph [0033] of Sintonen, the amplifier of Fig. 2, and the various ADC headroom adjustments shown in Figs. 3A and 3B. Thus, at the cost of converter resolution, Sintonen teaches providing an ADC conversion safety margin, which Sintonen refers to as “headroom,” to ensure that “clipping” of the received signal does not occur.

As such, the “headroom” at issue in Sintonen explicitly is the conversion headroom of an ADC used in received signal digitization. That is why Sintonen is entitled, “Interference Dependent ADC Headroom Adjustment.” And that is why Sintonen’s Field of Invention states that Sintonen is specifically directed to “...dynamically adjusting analog-to-digital converter headroom of radio receivers.”

Sintonen teaches two scenarios of adjusting the ADC conversion headroom for a received signal based on a comparison of the target (desired) and interference signal magnitudes. First, Sintonen teaches maintaining an 8 dB headroom at the ADC, for when the target (desired) signal is greater in magnitude than the interference signal (Fig. 3A and paragraph [0030]). Second, Sintonen teaches reducing the ADC headroom when the magnitude of the interference signal is greater than that of the target signal (Fig. 3B and paragraph [0031]). The ADC headroom is reduced in this case so that more of the ADC’s conversion range can be used for converting the target signal.

From these plain teachings, it is clear that Sintonen does not teach or suggest adjusting the transmit power headroom threshold of a mobile station, much less doing so in response to reverse link load indications. One of ordinary skill would not understand the Sintonen's teachings of dynamically adjusting the ADC of a radio receiver as adjusting the transmit power headroom threshold of a mobile station based on reverse link load indications, as claimed. Because that limitation is missing from Sintonen, and because that limitation is not taught or suggested by Corazza, the Patent Office has failed to establish a *prima facie* case for obviousness against claims 1, 4, 7, 14-15, and 17-18.

As a further rejection error, the rejection arguments depend on equating Sintonen's received signal interference with the reverse link loading at issue in the claims. See, for example, the first paragraph on p. 3 of the Office Action.

As a first point, reverse link loading relates to a base station receiving signals on the uplink, and not to received signal interference being experienced on the downlink by a particular mobile station. It is therefore plain error for the Patent Office to suggest that Sintonen's interference signal, as seen by a specific mobile station with respect to a desired received signal, is related to reverse link load at a base station. And it is erroneous to suggest that Sintonen changing the conversion headroom of its received signal ADC responsive to changing amounts of interference has anything to do with changing a mobile station's transmit power headroom threshold according to indications of changing reverse link load.

As a second point, the Patent Office also states "It is obvious to one of ordinary skill in the art that the interference experienced in a system can be directly related to the load on a link." (Final Office Action, page 2 lines 9-11). Respectfully, one of ordinary skill would understand that sometimes interference is due to load, but there is not necessarily a direct connection. For example, a lightly loaded cell could have a high level of interference if neighboring cells have many mobile stations transmitting. In contrast, a heavily loaded cell, such

as a cell loaded by a single high bandwidth user, may experience very little interference if other cells are not heavily loaded.

Further, the articulated reasoning provided by the Patent Office as to why it would have been obvious to one of ordinary skill in the art to combine Sintonen with Corazza is based directly on the erroneous assertion that Sintonen relates to adjusting a mobile station's transmit power headroom threshold. It does not. Sintonen does not relate to the reverse link, does not relate to adjusting reverse link data rates (Corazza), nor does it relate to adjusting the power headroom threshold used by a mobile station for transmitting on the reverse link (the claims).

Put simply, Sintonen teaches that the level of received signal interference changes dynamically, and that a mobile station can adjust the conversion headroom in the ADC being used to digitize its received signal, to prevent signal clipping (paragraph [0030]), while still using as much of the ADC's conversion range as possible for the desired component of the received signal (paragraph [0031]).

Claims 24 and 25 are rejected as obvious over the combination of Corazza and Sintonen, in further view of Raaf (U.S. Pub. 2004/0029604). The claims at issue are directed to a method (Claim 24) and apparatus (Claim 25) for adjusting a (transmit) power headroom threshold in a mobile station. The claims include the limitations of counting the number of times the mobile station is power limited for a retransmission of a frame, and adjusting a power headroom threshold of the mobile station based on the count.

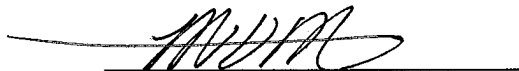
The rejection of these claims fails as a matter of law because the combination of references fails to teach or suggest adjusting the transmit power headroom threshold of a mobile station based on the number of times that a mobile station is power limited for retransmission of a frame. In particular, the rejection directly relies on the erroneous assertion that Sintonen teaches adjusting a mobile station's transmit power headroom threshold. Sintonen does not provide such teachings, as proven by the plain language of its disclosure. Nor does Raaf provide the missing teachings.

Raaf is relied on solely for its alleged teachings regarding counting preamble retransmissions at a maximum permissible power. Even that reliance is misplaced because counting the number of times a preamble is retransmitted at a maximum permissible power is not the same as the claim limitations at issue. Namely, in the claims, the count at issue is the number of times that the mobile station is power limited for retransmission of a frame—i.e., the number of times that the power needed for a retransmission exceeds the maximum transmit power. Raaf, on the other hand, seems to count preamble retransmissions conducted at a maximum power, and not the number of times that it is power-limited.

Further, it is also notable that Raaf is explicitly directed to initiating closed-loop power control on a signal (paragraph [0001]) for which Raaf teaches gradually ramping preamble transmission power upward toward an extreme value. This context and these operations are demonstrably unrelated to Corazza and Sintonen, and Raaf does not appear to combine with those references in any legally obvious manner.

Applicant appreciates the indication of allowable subject matter in claims 5, 6, 10-13, and 21-23. However, Applicant respectfully submits that all of the claims are patentable over the references made of record and allowance is requested.

Respectfully submitted,
COATS & BENNETT, P.L.L.C.



Dated: October 5, 2009

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